UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

OCT - 7 2014

MEMORANDUM

SUBJECT: Surface Water and Sediment Investigation Work Plan
Former Total Petroleum Refinery
Arkansas City, Kansas
Prepared for MRP Properties Company, LLC
RCRA ID# KSD087418695

FROM: Kelly Schumacher
Toxicologist
ENSV/EAMB

Catherine Wooster-Brown
Ecological Risk Assessor
ENSV/EAMB

TO: Brad Roberts
Project Manager
AWMD/RCAP

As requested, we have reviewed the "Surface Water and Sediment Investigation Work Plan," dated September 19, 2014, for the Former Total Petroleum Refinery, located in Arkansas City, Kansas. If you have any questions or need further assistance, please contact Catherine at x7425 or Kelly at x7963.

Ecological Risk Assessment Comments

General Comments

After reviewing this document, Region 7 ecological risk assessors were going to recommend that when collecting sediment for volatile organic compounds analysis, the sample needs to be discrete and then placed in the container that is listed in Table 3. However, on October 1, 2014, Region 7 risk assessors received the MRP Properties updated "Human Health Risk Assessment Work Plan for Surface Water and Sediment" in which the Kansas Department of Health and Environment asked MRP Properties to collect VOCs as discrete samples and MRP agreed. Therefore, Region 7 ecological risk assessors find that any VOC samples collected at the MRP properties for the screening level ecological risk assessment also need to be discrete samples. Collecting VOCs as discrete samples would increase the number of samples collected in the ponds and Walnut River. U.S. Environmental Protection Agency ecological risk assessors would like to review the updated "Surface Water and Sediment Investigation Work Plan for the MRP Properties" to verify the increased samples for VOCs and their locations.

Specific Comments

1. **Section 4.2, "Walnut River" (p. 4-3).** This Section states:

   "To verify the river sediment quality, five background sediment samples shall be collected from upstream of the Site (WRSED-1), one sediment sample will be collected immediately upstream of the NPDES outfall (WRSED-2), and another sediment sample will be collected downstream (WRSED-3) of the Site as shown on Figure 3. The background samples shall be collected from a 10 foot long area paralleling the waterfront of the river that extends approximately one third of the way across the cross-section of the channel. The location of the background sample area is shown on Figure 3. All sediment samples shall be collected below the water surface along the waterfront of the river at the sediment/water interface. Each of the five samples will be a "grab" sample collected from the shallow sediment (0-2 inches bgs) at the waterfront in accordance with the sediment sampling procedures described in the SOP included in Appendix A. All sediment samples shall be collected during low-flow conditions immediately following the collection of the Walnut River surface water samples described in Section 4.1."

   It is not clear to Region 7 ecological risk assessors how many total sediment samples will be collected in the Walnut River. The first sentence states that five background samples will be collected, then one upstream and one downstream of the NPDES outfall. That would be a total of seven samples. Then, sentence four says each of the five samples will be collected in shallow sediment. Also, the standard operating procedure in Appendix A does not discuss "grab" samples of sediment. Rather, a scoop, a core, a gravity, and a dredge sampler are discussed. This Section needs additional clarification and it should be updated to include discrete VOC samples. Composite sampling in the sediments in Walnut River for metals and other chemicals of concern, except VOCs, is best when the number of samples collected are so few.

Human Health Risk Assessment Comments

2. **Sections 3.3 (p. 3-2) and 4.2 (p. 4-2).** Section 3.3 provides the designations used to identify samples. The second paragraph refers to an "Inlet/Outlet" prefix. Section 4.2 references composite sediment samples for pond inlets and outlets. We believe the intent is to collect samples from each pond inlet and separate samples from each outlet. We are unclear what aliquots would be combined for each inlet and outlet composite sample. Please clarify that inlet and outlet samples will not be homogenized together and identify where the aliquots for each would be collected. Then, use "Inlet" for the inlet samples and "Outlet" for the outlet samples. Since there is no outlet for the stormwater pond, only an "Outlet" sample will be collected from this pond. Therefore, we believe the composite sample should be designated with the prefix "Inlet," not "Outlet," as currently stated in the last sentence of Section 3.3.

3. **Section 4.1 (pp. 4-1 and 4-2).** This section indicates that if a pond or river surface water sample is judged very turbid, then a portion of the sample will be filtered for dissolved metals analysis. Please confirm our assumption that these samples will be analyzed for both total and dissolved metals. Dissolved metals concentrations are typically used in ecological risk assessments, while human health risk assessments generally rely on total metals.

4. **Section 4.2 (p. 4-2) and Figure 4.** Composite samples will be collected from the pond walls, sides, and inlet of SWMU 23 (the stormwater pond). SWMU 23 was previously the No. 1 Oil

Trap. If the location where the oil waste entered SWMU 23, starting in the 1930s, is known, we suggest collecting a sample at that point, as we hypothesize higher concentrations could be found there. We are unclear if the current "inlet" is the same inlet where the oily waste water entered this SWMU.

5. **Section 4.2 (p. 4-3).** Five background sediment samples are planned for the Walnut River. Please note that this is not a sufficient number of samples to test for outliers or to statistically derive a background threshold value that could be used to inform a background cleanup level. (Generally, at least ten samples are needed for this purpose.) In contrast, collection of two sediment samples are planned immediately upstream of the outfall and downstream of the site. We question the collection of five background samples, when only two potentially impacted river sediment samples are planned. Further, we are uncertain why the outfall sample would be collected immediately upstream, rather than downstream. Please consider how the background samples are intended to be used, the most appropriate sampling locations near the outfall, and whether additional impacted river sediment samples should be collected.

6. **Section 5.4.1 (p. 5-2) and Figure 3.** This section describes collection of sediment samples for VOC analyses. As noted in the ecological risk assessment comments, composite samples should not be analyzed for VOCs due to the volatility of the compounds. Using composite sampling techniques (for metals and semi-volatile organic compounds) allows the collection of fewer sediment samples. However, collection of single discrete samples from each pond floor surface, floor subsurface, side, inlet, and outlet provides limited information. As previously mentioned, please collect an increased number of discrete sediment samples for VOC analyses. We suggest collecting and analyzing discrete samples from each of the locations where an aliquot is proposed on Figure 3.

7. **Section 5.4.4 (p. 5-3).** This section indicates that sediment samples with high clay content will not be homogenized due to difficulties mixing sub-samples. If a composite sediment sample cannot be homogenized, it will not represent a composite. If high clay conditions are noted in the field, we recommend collecting discrete grab samples (e.g., four from the pond floor surface, four from the pond floor subsurface, four from the pond sides, etc.) for all analyses.

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CONCURRENCE: Kristina:7665:100214:H:/ENSV/EAMB/RISKASSESORS/MEMORANDUMS/FY2014/CombinedComments/KSCWBMRPProperties SWandSedWPdatedSept2041-Final.docx				
DIV/BR	ENSV/EAMB	ENSV/EAMB	ENSV/EAMB	
NAME	Schumacher	Wooster-Brown	Beringer	
DATE	10/6/2014	10/3/14	10/20/14	
INITIALS	KMS	CWB	MWB	

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